March 23, 2016

Mr. Thomas Carpenter
Designated Federal Officer
EPA Science Advisory Board (1400R)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
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Submitted via email: carpenter.thomas@epa.gov

Re: Comments on the Draft SAB Report on the Revised Draft Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources

Dear Members of the Science Advisory Board:

The American Forest & Paper Association (AF&PA) and the American Wood Council (AWC) appreciate the opportunity to comment on the Biogenic Carbon Emissions Panel's February 8, 2016 draft report on EPA's revised draft *Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources* (Framework). Thank you for considering our comments and data as you work toward finalizing the Report.

Introduction

The American Forest & Paper Association (AF&PA) serves to advance a sustainable U.S. pulp, paper, packaging, tissue and wood products manufacturing industry through fact-based public policy and marketplace advocacy. AF&PA member companies make products essential for everyday life from renewable and recyclable resources and are committed to continuous improvement through the industry's sustainability initiative - *Better Practices, Better Planet 2020*. The forest products industry accounts for approximately 4 percent of the total U.S. manufacturing GDP, manufactures over $200 billion in products annually, and employs approximately 900,000 men and women. The industry meets a payroll of approximately $50 billion annually and is among the top 10 manufacturing sector employers in 47 states.

AWC is the voice of North American wood products manufacturing, representing over 75 percent of an industry that provides approximately 400,000 men and women in the United States with family-wage jobs. AWC members make products that are essential to everyday life from a renewable resource that absorbs and sequesters carbon. Staff

experts develop state-of-the-art engineering data, technology, and standards for wood products to assure their safe and efficient design, as well as provide information on wood design, green building, and environmental regulations. AWC also advocates for balanced government policies that affect wood products.

Alternative Fate Approach for Manufacturing Residuals

If a feedstock approach is needed, AF&PA and AWC support using an alternative fate approach in the Framework for calculating the net emissions from manufacturing and forest residuals used for energy. The alternative fate approach consists of a comparison of the emissions from bioenergy to those that might have occurred if the feedstocks had not been used for energy.

Energy produced in forest products mills from woody manufacturing residuals is widely recognized as a carbon neutral fuel around the world, and rightly so. Trees absorb CO_2 to grow, and these wood residuals would have decayed and released CO_2 to the atmosphere even if they had not been used to produce energy and displace fossil fuels. This "carbon cycle" has long been recognized in renewable energy and GHG reduction policy.

In particular, forest products manufacturing residuals arise from the harvesting and processing of biomass for the purpose of manufacturing products to meet societal needs, and of necessity, the vast majority of this very large continuously produced volume of residuals would have to be disposed of – through landfilling, incinerating, wastewater treatment and discharge, or biodegrading in place – if they were not used as an energy source. Because biodegradation of woody forest products manufacturing residuals can release methane, and methane has a much greater impact on global warming than CO_2,[1] the alternative fate would be disposal of these residuals (i.e., not using them for fuel) in those cases can in fact result in significantly higher addition of GHGs to the atmosphere, in terms of global warming potential, than from their combustion for energy. In addition, EPA has recognized in other contexts that burning biomass to generate thermal energy and/or electricity means that fossil fuel will not be burned to meet that same energy demand, thus reducing the build-up of anthropogenic CO_2 in the global atmosphere.

A leading recent study by the National Council for Air and Stream Improvement[2] has found substantial greenhouse gas reduction benefits in using biomass manufacturing residuals for energy in the forest products industry. Accounting for fossil fuel

[1] Viewed over a 100-year time frame, EPA believes that methane has 25 times greater impact on global warming per ton emitted than CO_2. *See* Table A-1 to 40 C.F.R. part 98 subpart A. Over a 20-year timeframe, the greater impact of methane emissions on the potential for global warming is even higher: According to Table 8.7 of the IPCC's *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, the 20-year global warming potential of methane is 86 times that of CO_2.

[2] Gaudreault and Miner, *Temporal Aspects in Evaluating the Greenhouse Gas Mitigation Benefits of Using Residues from Forest Products Manufacturing Facilities for Energy Production*. J. of Industrial Ecology. Vol. 19, No. 6, pp 994-1007 (2015).

displacement and avoided emissions associated with disposal, the study finds that the use of these biomass residuals each year avoids the emission of approximately 181 million metric tons of CO2e. (This is equivalent to removing about 35 million cars from the road.)

The final SAB report should clearly recognize the avoided methane benefits of using biomass manufacturing residuals for energy that otherwise would have been disposed of in a landfill.

Assessment Baselines

In the draft report, the Panel continues to express concerns that "the reference point approach has important limitations and should not be the preferred approach." However, the report fails to convey the benefits of using a reference point baseline approach.

The reference point baseline approach is an accurate and transparent method to assess the actual net emissions of biogenic GHGs to the atmosphere from the use of biomass for energy, which also is the pragmatic approach to implement in a regulatory context. A reference baseline approach that uses current and historical data provides a more straightforward and transparent way to assess the actual net emissions from the use of biomass for energy. While a reference point baseline approach may have limitations, it is much more objective than a future anticipated baseline approach. In fact, a commentary published in Nature Climate Change, "Uncertainty in Projecting GHG Emissions From Bioenergy," demonstrates that reference point baselines have actually been more accurate predictors of future forest inventories than future anticipated baselines.[3] The article concluded that "[g]iven the challenges in predicting the future status of forest resources, anticipated future baselines might be best suited for planning and policy development, while constant reference baselines might be more appropriate for monitoring and regulatory frameworks."[4] Moreover, a future anticipated baseline will involve much greater complexity and cost to the regulated procurement and regulatory systems, which, given the low margins that exist for bioenergy markets especially relative to alternate energy resources, could deter biomass use for energy. As a result, the bioenergy markets will not be as viable, and a secondary impact of reduced market incentives will act against keeping lands forested, particularly for smaller entities. Because these smaller land owners make up the largest proportion of private forest land in the US, the perverse ultimate impact of using future anticipated baselines in the regulatory scheme will be to incent the loss of forest land and contribute to the loss of forest carbon sequestration rather than maintaining or enhancing it.

The final SAB report should examine the benefits and limitations with each approach and recognize that the limitations associated with reference point baseline approach need not preclude its use in regulatory programs.

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[3] Buchholz, T., S. Prisley, G. Marland, C. Canham and N. Sampson, *Uncertainty in Projecting GHG Emissions from Bioenergy*, Nature Climate Change, Vol. 4, at 1045-1047 (Dec. 2014).
[4] *Id*. at 1047.

Temporal Scales When Applying Future Anticipated Baseline Approach
If the Framework allows for the anticipated future baseline approach, we support using a temporal scale for biogenic carbon accounting that is based on the time horizon over which effects are expected to occur. It is important to use a timeframe that captures the investment response – i.e., market forces that increase forest productivity and keep forestlands from being diverted to development or other low-carbon storage uses.

Because of the global warming dynamics of CO_2 and the timing of benefits from biomass energy systems, it is appropriate for the SAB report to recommend the longest temporal horizon of all feedstocks be selected. We support the use of the Intergovernmental Panel on Climate Change's (IPCC's) most recent assessment which finds that the focus should be on cumulative emissions over long time periods rather than short-term "carbon debts."[5] Energy from forest-derived biomass "typically result in lower cumulative CO_2 emissions over time, and cumulative CO_2 emissions, according to the IPCC, are the best predictor of future peak global temperatures."[6]

Alternative Calculation Formula for BAF
In its report, the Panel describes and illustrates the application of an alternative equation for calculating biogenic assessment factors (BAFs). This formula is based on changes in terrestrial carbon stocks (e.g., live stocks in biomass, dead stocks, soil stocks, etc.) rather than carbon fluxes as originally proposed by EPA. Acknowledging the importance of non-CO_2 biogenic GHGs like methane, the Panel indicates that "even if an accounting framework is limited to CO2 only, it is important to recognize and analyze the situations in which CO_2 emissions do not represent overall GHG emissions because of substantial emissions of N_2O and/or CH4."

Our position has always been and remains that it is essential to consider the alternative fates of forest residues and manufacturing residuals. In order to accomplish this, it is essential to consider both CO_2 and methane emissions.

Options for Calculating Cumulative BAFs
In its framework, EPA proposes a cumulative BAF based on the differences in carbon stocks between a business-as-usual scenario and a bioenergy scenario, with the difference determined at the end of the temporal horizon. The Panel proposes an alternative cumulative calculation that attempts to account for the time path of the additional emissions associated with the bioenergy scenario by accumulating the annual differences in carbon stocks on the land during the entire temporal horizon.

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[5] Intergovernmental Panel on Climate Change (IPCC), *Climate change 2013: The physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, et al. (eds.). Cambridge University Press, Cambridge, UK and New York.
[6] Reid Miner, et al., *Forest Carbon Accounting Considerations in US Bioenergy Policy*, Journal of Forestry (Nov. 2014), at 597, *available at* http://www.safnet.org/documents2014/ForestCarbonAccountingConsiderations_nov2014.pdf.

If the Framework includes an anticipated future baseline option, such an approach should account for the differences in carbon stocks at a single point at the end of a time period that sufficiently captures all terrestrial effects on a regional scale. The Framework should not be limited to a more complex methodology that requires the accumulating of annual differences in carbon stocks over time.

Modeling Approaches When Applying Anticipated Future Baselines
The Panel investigated several modeling approaches for the application of anticipated future baselines and concluded that an approach that integrates economic dynamics (e.g., investment response where appropriate) and biophysical effects was appropriate.

The Panel's draft report raises several concerns regarding the Forest and Agriculture Sector Optimization Model (FASOM) model, which indicates that any type of complex modeling, including the alternative cumulative carbon stock approach proposed by the Panel, is inherently uncertain, difficult to implement, and subject to major changes when new information becomes available.

We support using actual data and a reference point baseline. If a modeling approach is used, BAF estimates can differ dramatically depending on which model is used.

We appreciate your consideration of our comments. If you have any questions, please contact me at (202) 463-2777 or at paul_noe@afandpa.org.

Sincerely,

Paul R. Noe
Vice President, Public Policy
American Forest & Paper Association
American Wood Council